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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte WILLIAM Y. CONWELL

Appeal 2009-0153
Application 09/670,113
Technology Center 2600

Decided:¹ March 9, 2009

Before MAHSHID D. SAADAT, ROBERT E. NAPPI, and JOHN A.
JEFFERY, *Administrative Patent Judges*.

JEFFERY, *Administrative Patent Judge*.

DECISION ON APPEAL

Appellant appeals under 35 U.S.C. § 134 from the Examiner's rejection of claims 3, 5, 8-20, and 22-25. We have jurisdiction under 35 U.S.C. § 6(b). We affirm-in-part.

¹ The two-month time period for filing an appeal or commencing a civil action, as recited in 37 C.F.R. § 1.304, begins to run from the decided date shown on this page of the decision. The time period does not run from the Mail Date (paper delivery) or Notification Date (electronic delivery).

STATEMENT OF THE CASE

Appellant invented a method for encoding a digital watermark in a received image that includes a depiction of text. The watermark associates the image with the text. The invention can be used in various applications including indexing electronic documents or watermarking images acquired from security monitoring cameras.² Claim 3 is illustrative:

3. A method comprising:

receiving data corresponding to an image, the image including a depiction of text; recognizing at least some of said depicted text; and

encoding a watermark in said image, said watermark serving to associate said image with said recognized text.

The Examiner relies on the following prior art references to show unpatentability:

Li	US 5,506,697	Apr. 9, 1996
Conover	US 6,373,960 B1	Apr. 16, 2002 (filed Jan. 6, 1998)
Alves	US 6,747,687 B1	Jun. 8, 2004 (filed Jan. 11, 2000)
Sites	US 6,799,302 B1	Sep. 28, 2004 (filed Sep. 19, 2000)
Venkatesan	US 6,801,999 B1	Oct. 5, 2004 (May 20, 1999)

1. The Examiner rejected claims 3, 5, 16, 18-20, and 23 under 35 U.S.C. § 102(b) as anticipated by Li (Ans. 3-4).
2. The Examiner rejected claims 8, 9, 22, and 24 under 35 U.S.C. § 103(a) as unpatentable over Alves and Li (Ans. 4-5).

² See generally Spec. 1:14–2:20.

3. The Examiner rejected claims 10-15 under 35 U.S.C. § 103(a) as unpatentable over Sites and Li (Ans. 5-6).
4. The Examiner rejected claim 17 under 35 U.S.C. § 103(a) as unpatentable over Li and Venkatesan (Ans. 6-7).
5. The Examiner rejected claim 25 under 35 U.S.C. § 103(a) as unpatentable over Alves, Li, and Conover (Ans. 7).

Rather than repeat the arguments of Appellant or the Examiner, we refer to the Briefs and the Answer³ for their respective details. In this decision, we have considered only those arguments actually made by Appellant. Arguments which Appellant could have made but did not make in the Briefs have not been considered and are deemed to be waived. *See* 37 C.F.R. § 41.37(c)(1)(vii).

THE ANTICIPATION REJECTION

Regarding the Examiner's anticipation rejection of representative claim 3,⁴ Appellant argues that the Examiner erred in construing the recited "watermark" to read on Li's bar code 45. According to Appellant, skilled artisans would understand from the present disclosure (and the subject matter incorporated by reference) that a watermark is "essentially

³ Throughout this opinion, we refer to (1) the substitute Appeal Brief filed May 11, 2006; (2) the Examiner's Answer mailed Oct. 17, 2007; and (3) the Reply Brief filed Dec. 3, 2007.

⁴ Although Appellant nominally argues claim 16 separately from claim 3 (App. Br. 8-10), the arguments presented are commensurate with those presented for claim 3. Accordingly, we group claim 16 with claim 3 (along with claims 5, 18-20, and 23 which were not separately argued) and select claim 3 as representative. *See* 37 C.F.R. § 41.37(c)(1)(vii).

imperceptible”—an attribute that is diametrically opposite to the bar code of Li which is said to be “overt and conspicuous” (App. Br. 6-9; Reply Br. 2).

The Examiner, however, notes that since the term “watermark” is not explicitly defined in the Specification, it can be construed more broadly such that it reads on Li’s coded symbol which includes hidden data for controlling dissemination of the original document’s content (Ans. 8-9).

The issue before us, then, is as follows:

ISSUE

Has Appellant shown that the Examiner erred in finding that Li’s encoded symbol is a watermark in rejecting representative claim 3 under § 102?

FINDINGS OF FACT

The record supports the following findings of fact (FF) by a preponderance of the evidence:

1. The Specification of the present application refers to known watermarking techniques disclosed in a copending application 09/503,881 (now U.S. Pat. 6,614,914 B1) (“Rhoads”), incorporated by reference in the present application (Spec. 1:26–2:2).

2. According to Rhoads, “[d]igital watermarking is a process for modifying media content to embed a machine-readable code into the data content. The data may be modified such that the embedded code is imperceptible or nearly imperceptible to the user, yet may be detected through an automated detection process” (Rhoads, col. 1, ll. 25-29).

3. Rhoads notes that “[t]he embedder encodes a message into a digital signal . . . such that the message is imperceptible to the ordinary observer in output form” (Rhoads, col. 6, ll. 54-56).

4. According to Rhoads, “[d]igital watermarking technology allows the user to embed digital messages within media content. These digital messages are imperceptible to humans but can be read by computers and specialized devices” (Rhoads, col. 35, ll. 2-5).

5. Rhoads cites an exemplary technique using Digimarc’s PictureMarc that can embed a visually imperceptible signal into a digital still image. This signal can be read with an appropriate detector (Rhoads, col. 35, ll. 15-20).

6. Rhoads further notes that with the advent of digital watermarking technology, digital and printed images can be embedded with a digital watermark that is imperceptible to the user. The additional information associated with the watermark remains dormant until the proper hardware or software detects it (Rhoads, col. 35, ll. 39-45).

7. Li discloses an apparatus for processing human- and machine-readable documents. Specifically, an original document containing human-readable printed information is encoded in one or more bar-code symbols and transmitted by facsimile to a remote site where it is machine read, decoded, and printed to accurately reproduce the original document (Li, Abstract).

8. In one embodiment, an original document 40 with alphanumeric text 40a is read by scanner 42, and an encoder 47 converts the alphanumeric text into a highly compressed coded symbol 45. The coded symbol 45 is

then printed on a document 50 which represents the original document bearing the coded symbol 45 (Li, col. 7, l. 46 – col. 8, l. 3; Fig. 3).

9. The document 50 is transmitted from facsimile machine 52 to a remote site's facsimile machine 54 which prints a facsimile document 56 of the original document 50. The facsimile document 56 contains human-readable alphanumeric text 56*a* from original document 50 and machine-readable facsimile symbol 56*b* from symbol 45 of document 50 (Li, col. 8, ll. 42-48; Fig. 3).

10. At the remote location, a scanner 58 reads the facsimile symbol 56*b*, and a decoder 60 converts the symbol code back to an alphanumeric code which is entered into computer 62 (Li, col. 8, ll. 42-52; Fig. 3). Printer 66 then records the stored, decoded facsimile symbol as a printout 68—a printout that duplicates original document 40, with or without symbol 45 or 56*b* (Li, col. 9, ll. 12-18; Fig. 3).

11. Symbol 45 may be encoded with instructions to change the format in which the text appears in printout 68 from that appearing in original document 40. For example, application data source 64 can introduce instructions to call for the computer 62 to add standard text, graphics, or charts to printout 48 that are not contained in the original document. Thus, text 40*a* of the original document 40 may be variable information which is encoded in the symbol along with the instructions from the application data source 64. Computer 62 then acts on these instructions to supplement the variable information with specified or standard fixed information to ultimately generate a printout 68 containing both the variable and standard information (Li, col. 9, ll. 18-31; Fig. 3).

12. The encoded symbol 45 can include application data generated by application data source 64. This application data includes information that does not appear in the document text, such as (1) information that identifies particular software used to generate the original document text; (2) formulas used to calculate numerical information in that text; and (3) other beneficial underlying document information that “will occur to those knowledgeable in the art” (Li, col. 8, ll. 4-18).

13. The encoded symbol 45 may also include data for controlling dissemination of all or portions of the content of the original document 40 such as control data specifying (1) a limited number of facsimile transmissions of the document 50; (2) a time limit for such transmissions; (3) a list of those authorized to receive these transmissions; and (4) a limitation as to what portions of the original document can be transmitted (Li, col. 8, ll. 19-26).

14. The format of symbol 45 is preferably the PDF417 format (Li, col. 7, l. 52; Fig. 3). This format is a two-dimensional bar code symbol, such as that shown in Figure 2 (i.e., bar code symbol 22) in connection with another embodiment. In this alternative embodiment, the bar code is encoded with printed information 22a of original document 20 (Li, col. 3, ll. 46-67; Figs. 1 and 2).

15. In this alternative embodiment, the encoded information can include (1) the type font of the printed information 22a; (2) format information (e.g., margin and tab settings of the printed information 22a); and (3) at least a portion of the printed information 22a itself (Li, col. 3, ll. 53-57; Fig. 1).

PRINCIPLES OF LAW

Anticipation is established only when a single prior art reference discloses, expressly or under the principles of inherency, each and every element of a claimed invention as well as disclosing structure which is capable of performing the recited functional limitations. *RCA Corp. v. Appl. Dig. Data Sys., Inc.*, 730 F.2d 1440, 1444 (Fed. Cir. 1984); *W.L. Gore & Assoc., Inc. v. Garlock, Inc.*, 721 F.2d 1540, 1554 (Fed. Cir. 1983).

“[T]he specification is the single best guide to the meaning of a disputed term, and...acts as a dictionary when it expressly defines terms in the claims or when it defines terms by implication.” *Phillips v. AWH Corp.*, 415 F.3d 1303, 1321 (Fed. Cir. 2005) (en banc) (internal quotation marks and citations omitted).

During examination of a patent application, a claim is given its broadest reasonable construction “in light of the specification as it would be interpreted by one of ordinary skill in the art.” *In re Am. Acad. Of Sci. Tech. Ctr.*, 367 F.3d 1359, 1364 (Fed. Cir. 2004).

“[M]aterial incorporated by reference is effectively part of the host document as if it were explicitly contained therein.” *Liebel-Flarsheim Co. v. Medrad, Inc.*, 481 F.3d 1371, 1382 n.3 (Fed. Cir. 2007) (internal citations and quotation marks omitted).

ANALYSIS

We begin our analysis by construing the key disputed limitation of claim 3 which calls for, in pertinent part, encoding a *watermark*. To this end, we first consult the Specification, for it is the single best guide to discern the meaning of the disputed term, “watermark.” *See Phillips*, 415

F.3d at 1321. As the Examiner indicates (Ans. 8-9), however, Appellant does not explicitly define the term in the Specification. But the Specification does refer generally to known watermarking techniques disclosed in a copending application (and its corresponding U.S. patent to Rhoads) that is incorporated by reference in the present application (FF 1). That incorporated reference notes that “[d]igital watermarking is a process for modifying media content to embed a machine-readable code into the data content. The data may be modified such that the embedded code is *imperceptible or nearly imperceptible* to the user, yet may be detected through an automated detection process” (FF 2; emphasis added). Rhoads cites various other examples in the patent of watermarking in which the signals or messages are imperceptible to the user, yet can be read by an appropriate machine (FF 3-6).

Based on these facts, and given that the Rhoads disclosure is incorporated by reference in the present application as if it were explicitly contained therein, *see Liebel-Flarsheim*, 481 F.3d at 1382 n.3, we find that the Specification has, in effect, implicitly defined the term “watermark” to mean an embedded machine-readable code that is *imperceptible or nearly imperceptible* to the user, yet may be detected through an automated detection process.⁵

⁵ *Accord In re Nuijten*, 500 F.3d 1346, 1348 (Fed. Cir. 2007), *reh’g en banc denied*, 515 F.3d 1361 (Fed. Cir. 2008) and *cert. denied*, 129 S. Ct. 70 (2008) (“[W]atermarking is a technique by which an original signal (such as a digital audio file) is manipulated so as to embed within it additional data. The additional data is *preferably imperceptible* to someone who views or listens to the signal However, an analysis of the file by software capable of detecting the watermark will reveal the mark’s contents.”) (emphasis added).

With this construction, we turn to Li. While Li's bar codes 45 and 56*b* themselves may be "overt and conspicuous" as Appellant argues (App. Br. 7) (*see* FF 7-10, 14), the *underlying information and corresponding functional instructions* represented by those bar codes nonetheless remain imperceptible or nearly imperceptible to the user until read by a machine.

Indeed, that is the very purpose of a bar code: to encode underlying information and instructions in a compact, standardized, and readable bar code format. The underlying information represented by the bar code essentially remains "hidden" or imperceptible to the user until it is read by a scanner. For example, data identifying products in grocery stores are typically bar coded directly on the products themselves. If a consumer merely views the bar code itself, the underlying data represented by that barcode is not readily apparent to the consumer: all the consumer sees is the code. It is only until the barcode is actually read by a machine that the corresponding data is analyzed and the pricing information is revealed (unless it is otherwise displayed). Thus, while the *barcode itself* is readily apparent to the user, the *underlying information* associated with the barcode is imperceptible to the user until read by a machine. As such, this underlying information is, in effect, an encoded "watermark."

Likewise, while Li's encoded symbols 45 and 56*b* may be overtly and conspicuously emblazoned on their corresponding documents (*see* FF 8-10 and 14), their underlying information and functional instructions are not. Symbol 45, for example, may be encoded with specific instructions to call for the computer 62 to change the format of the printout 68 from that of the original document 40 (FF 11). The symbol 45 can also be encoded with a wide variety of "application data" that is generated by application data

source 64—data that does not otherwise appear in the document text (FF 12). Moreover, the encoded symbol 45 may also include data for controlling dissemination of all or portions of the content of the original document 40 in accordance with specified conditions (FF 13). Likewise, the analogous encoded symbol of Li’s first embodiment also includes encoded information pertaining to the document that is not apparent from the code itself. *See* FF 15. These underlying encoded instructions and information associated with their respective barcode fully meet a “watermark” as claimed.

Thus, while the Examiner may have overstated the appropriate standard used to interpret claims during examination,⁶ we nonetheless find the Examiner’s broad construction to be reasonable in light of the Specification. *See Am. Acad.*, 367 F.3d at 1364.

For the foregoing reasons, Appellant has not persuaded us of error in the Examiner’s anticipation rejection of representative claim 3. Therefore, we will sustain the Examiner’s rejection of that claim, and claims 5, 16, 18-20, and 23 which fall with claim 3.

THE OBVIOUSNESS REJECTION OVER ALVES AND LI

Claims 8, 9, 22, 24, and 25

Regarding independent claim 8, the Examiner finds that Alves discloses a method of augmenting image data collected by a security monitoring camera with every claimed feature except for digitally watermarking image data where the watermark associates the image data

⁶ *See* Ans. 8 (“[T]he examiner is interpreting the ‘watermark’ *as broad as possible . . .*”); *see also* Ans. 9 (noting that the term ‘watermark’ was given “its *broadest interpretation possible*”) (emphases added).

with text information. The Examiner, however, relies on Li for this feature in concluding the claim would have been obvious (Ans. 4-5).

Appellant reiterates that Li fails to disclose watermarking as claimed (App. Br. 11), but adds that the Examiner's proposed modification of Alves is based on hindsight reconstruction. According to Appellant, the Examiner failed to show that skilled artisans would have looked to Li's fax-based system involving barcodes in modifying Alves' vehicle recognition system which does not concern documents. Appellant further notes that neither reference mentions authentication which is the basis for the Examiner's reason to combine the references (App. Br. 12; Reply Br. 4).

The Examiner responds that the combining of Alves and Li is proper. According to the Examiner, not only does Alves' acquired image and associated text information correspond to Li's document images 20 and 40, Alves encodes a time stamp into the image—an encoding process that corresponds to Li's encoding information into the document (Ans. 11).

Claims 10-15

Regarding representative claim 10,⁷ the Examiner finds that Sites discloses all of the claimed subject matter except for digitally watermarking the electronic document and relies on Li for this teaching in concluding that the claim would have been obvious (Ans. 5-6, 13).

Appellant reiterates that Li does not teach watermarking and therefore does not cure the shortcomings of Sites, and (2) the Examiner's rationale for

⁷ Appellant presents arguments for claim 10, but does separately argue claims 11-15. *See* App. Br. 15-16. Accordingly, we select claim 10 as representative of this group. *See* 37 C.F.R. § 41.37(c)(1)(vii).

combining the references is based on impermissible hindsight (App. Br. 15-16).

Claim 17

Regarding claim 17, the Examiner finds that Li discloses all of the claimed subject matter except for the watermark to serve as a pointer to a memory location in which the recognized text is stored. The Examiner, however, relies on Venkatesan for this teaching in concluding that the claim would have been obvious (Ans. 6-7).

Appellant argues that Venkatesan is in a different field of endeavor—a technique for making software objects resistant to hacking and, as such, only through hindsight would skilled artisans have modified Li as the Examiner proposes (App. Br. 10-11; Reply Br. 4).

ISSUES

(1) Has Appellant shown that the Examiner erred in finding that Alves and Li collectively teach or suggest a method of augmenting image data collected by a security monitoring camera including digitally watermarking the image data, where the watermark associates the image data with the text information in rejecting claim 8 under § 103?

(2) Has Appellant shown that the Examiner erred in finding that Sites and Li collectively teach or suggest a method of receiving an electronic document and digitally watermarking the electronic document, where the watermark associates the image data with the text information in rejecting claim 10 under § 103?

(3) Has Appellant shown that the Examiner erred in finding that Li and Venkatesan collectively teach or suggest a watermark that serves as a

pointer to a memory location in which the recognized text is stored in rejecting claim 17 under § 103?

(4) Is the Examiner's reason to combine the teachings of these references supported by articulated reasoning with some rational underpinning to justify the Examiner's obviousness conclusion?

FINDINGS OF FACT

The record supports the following additional findings of fact (FF) by a preponderance of the evidence:

16. Alves discloses a system for recognizing the same vehicle at different times and places. Specifically, images of vehicles 110 and 112 are acquired via an entrance video camera 104 and an exit video camera 116. In response to a trigger signal, single video frames are time-stamped (Fig. 2, Step 210) and a vehicle detection tag (VDT) is created from the time-stamped image (Step 212). The VDTs are sent from entrance and exit subsystems 106 and 118, respectively, to a matcher 110. The matcher then uses the unique characteristics of the vehicles obtained via the VDTs to declare a match (Alves, col. 2, l. 52 – col. 3, l. 62; Figs. 1 and 2).

17. According to Alves:

While a license plate number is unique, reading any or all of a license plate is not necessary for the extraction of visual signatures related to particular cars. For example, in the limited variety of cars that would patronize a particular parking lot, the color, trim, style, tires, wheelcovers, collision damage, etc., of

each vehicle can be used in combination to distinguish individual ones.

Alves, col. 2, ll. 15-21; col. 3, ll. 6-12).

18. For each vehicle image, the entry matcher subsystem recognizes visual cues, unique for that vehicle, and reduces it into a vehicle detection tag (Alves, col. 4, ll. 43-46).

19. “Since a license plate is a very unique feature of any vehicle, the system’s design maximizes the use of the license plate in creating the vehicle detection tag, though the presence of a license plate is not essential to creating a unique vehicle detection tag” (Alves, col. 4, ll. 46-50).

20. “The matcher never explicitly ‘reads’ the license plate. It incorporates the visual characteristics of the plate, as well as other parts of the vehicle into each vehicle detection tag” (Alves, col. 4, ll. 50-53).

21. As an alternative to Li’s embodiments discussed in Facts 7-15, Li’s symbol 45 may be encoded as a bit-mapped image of document 40 which can be readily transmitted and stored in computer memory in a bit-mapped encoded format (Li, col. 9, ll. 35-42).

22. Receiving facsimile machine 54 can send the symbol image facsimile data directly to the computer 62 via line 63 for storage in the computer’s memory (Li, col. 9, ll. 3-11; Fig. 3).

23. Sites discloses a method for printing a received electronic document which can be a page description language (PDL) file or an Adobe portable document format (PDF) file (Sites, col. 2, ll. 23-39; Fig. 1).

24. In Sites, the PDL file can include text, graphics, and images in raster format along with other kinds of information, including watermarks (Sites, col. 2, ll. 41-45).

25. Venkatesan discloses a technique for imparting substantial break-once-run-everywhere (BORE) resistance to passive and active software objects and to control access and use of resulting protected objects by a client computer (Venkatesan, Abstract).

26. A BORE resistant object can be created by embedding a relatively large number (n) of watermarks (e.g., n = 500-1000) throughout a single software object via different secret watermark keys (Venkatesan, col. 13, ll. 20-26).

27. Each one of the secret watermark keys defines a starting location in a protected object (i.e., a pointer to a location at which a corresponding watermark appears) (Venkatesan, col. 13, ll. 27-36).

28. Once a third-party watermarking authority (WA) receives an unwatermarked copy of the object, the WA then embeds the watermark n times, each beginning at a starting location determined by a corresponding different one of the n keys throughout the object to yield the watermarked object (Venkatesan, col. 13, ll. 37-47).

29. Conover discloses a method for embedding watermarks into compressed video data. The watermark appears imperceptibly but detectably in decompressed video data (Conover, Abstract; col. 5, ll. 30-32).

30. "The VDT is preferably a distilled set of data artifacts that represent a unique visual signature of the vehicle. All normal 'picture' information that a human would recognize would ordinarily be discarded, e.g., to save on processing time and storage needs" (Alves, col. 3, ll. 25-30).

PRINCIPLES OF LAW

In rejecting claims under 35 U.S.C. § 103, it is incumbent upon the Examiner to establish a factual basis to support the legal conclusion of obviousness. *See In re Fine*, 837 F.2d 1071, 1073 (Fed. Cir. 1988). In so doing, the Examiner must make the factual determinations set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 17 (1966).

Discussing the question of obviousness of claimed subject matter involving a combination of known elements, *KSR Int'l v. Teleflex, Inc.*, 550 U.S. 398, 127 S. Ct. 1727 (2007), explains:

When a work is available in one field of endeavor, design incentives and other market forces can prompt variations of it, either in the same field or a different one. If a person of ordinary skill can implement a predictable variation, § 103 likely bars its patentability. For the same reason, if a technique has been used to improve one device, and a person of ordinary skill in the art would recognize that it would improve similar devices in the same way, using the technique is obvious unless its actual application is beyond his or her skill. *Sakraida* [v. *AG Pro, Inc.*, 425 U.S. 273 (1976)] and *Anderson's-Black Rock, Inc. v. Pavement Salvage Co.*, 396 U.S. 57 (1969)] are illustrative—a court must ask whether the improvement is more than the predictable use of prior art elements according to their established functions.

KSR, 127 S. Ct. at 1740. If the claimed subject matter cannot be fairly characterized as involving the simple substitution of one known element for another or the mere application of a known technique to a piece of prior art ready for the improvement, a holding of obviousness can be based on a showing that “there was an apparent reason to combine the known elements in the fashion claimed.” *Id.* at 1740-41. Such a showing requires

“some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness” . . . [H]owever, the analysis need not seek out precise teachings directed to the specific subject matter of the challenged claim, for a court can take account of the inferences and creative steps that a person of ordinary skill in the art would employ.

Id. at 1741 (quoting *In re Kahn*, 441 F.3d 977, 988 (Fed. Cir. 2006)).

If the Examiner’s burden is met, the burden then shifts to the Appellant to overcome the prima facie case with argument and/or evidence. Obviousness is then determined on the basis of the evidence as a whole and the relative persuasiveness of the arguments. See *In re Oetiker*, 977 F.2d 1443, 1445 (Fed. Cir. 1992).

“Two separate tests define the scope of analogous prior art: (1) whether the art is from the same field of endeavor, regardless of the problem addressed, and (2) if the reference is not within the field of the inventor’s endeavor, whether the reference still is reasonably pertinent to the particular problem with which the inventor is involved.” *In re Bigio*, 381 F.3d 1320, 1325 (Fed. Cir. 2004).

ANALYSIS

Claims 8, 9, 22, 24, and 25

Based on the record before us, we are persuaded of error in the Examiner’s obviousness rejection of independent claim 8 which calls for, in pertinent part, augmenting image data collected by a security monitoring camera including digitally watermarking the image data, where the watermark associates the image data with the text information.

Alves' vehicle recognition system utilizes acquired images from cameras to determine the unique characteristics of a vehicle in determining whether a match exists (FF 16). To this end, unique visual cues for vehicles are recognized and reduced to a "vehicle detection tag" (FF 18). While not essential to this process, the license plate is nonetheless used to create a vehicle detection tag (FF 19).

As the Examiner indicates, the images acquired by Alves' system contain *text information* associated with the license plate (Ans. 11; emphasis added). While actually *reading* the text may not be necessary in Alves (FF 17 and 20), the text on a license plate can nonetheless impart distinctive visual characteristics and qualities to the plate (and therefore the vehicle itself) in terms of color, style, layout, font, format, etc. This information associated with the license plate's text, or "text information," is well known. For example, the license plates of different states in the U.S. have, among other things, different colors and fonts associated with the plate's text. Even license plates within the same state can have different colors and fonts. As such, we see no reason why this "text information" could not likewise provide some information contributing to a unique visual cue associated with a vehicle that Alves' system could use in its recognition process. That Alves emphasizes that "a license plate is a very unique feature of any vehicle" that is used to create the vehicle detection tag (FF 19) only bolsters this conclusion.

However, we see no rational basis on this record why skilled artisans would have combined the teachings of Li pertaining to a document encoding system with Alves' vehicle identification system. Significantly, Alves' system creates a vehicle detection tag (VDT) from the time-stamped vehicle

image data and sends this VDT to the matcher to determine a match (FF 16, 18). The VDT, however, is merely a set of data artifacts that represent unique vehicle visual signatures (FF 30): it is not commensurate with the image data used in Li's document processing system. To the extent that the Examiner's position (Ans. 4, 5, 10, and 11) is premised on somehow watermarking Alves' VDT information in light of Li, we fail to see how or why such a watermarking would have been obvious to ordinarily skilled artisans. As such, we find the Examiner's reason to combine the teachings of Alves and Li is not supported by articulated reasoning with some rational underpinning to justify the Examiner's obviousness conclusion.

For the foregoing reasons, Appellant has persuaded us of error in the Examiner's rejection of representative claim 8. Therefore, we will not sustain the Examiner's rejection of that claim, and dependent claims 9, 22, 24, and 25 for similar reasons.

Claims 10-15

We will, however, sustain the Examiner's rejection of representative claim 10 which calls for, in pertinent part, receiving an electronic document and digitally watermarking the electronic document such that the watermark associates the image data with the text information. First, the Examiner's reliance on Sites for teaching the recited steps of receiving and analyzing an electronic document (FF 23-24; Ans. 5-6) is undisputed. Second, we find no error in the Examiner's combining the teachings of Li with Sites essentially for the reasons indicated previously. Our previous discussion in connection with claims 3 and 8 applies equally here and we therefore incorporate that discussion by reference.

For the foregoing reasons, Appellant has not persuaded us of error in the Examiner's rejection of representative claim 10. Therefore, we will sustain the Examiner's rejection of that claim, and claims 11-15 which fall with claim 10.

Claim 17

We will also sustain the Examiner's rejection of claim 17 which calls for, in pertinent part, the watermark to serve as a pointer to a memory location in which the recognized text is stored. First, our previous discussion in connection with the watermarking capabilities of Li applies equally here and we therefore incorporate that discussion by reference.

Second, we see no error in the Examiner's combining the teachings of Venkatesan with Li to arrive at the claimed invention. While Venkatesan pertains to enhancing protection of software objects, the reference at least fundamentally teaches the desirability of using watermarks to define a pointer to a particular location. *See* FF 26-28.

We see no reason why this teaching could not be applied to Li's watermarking capabilities, particularly since Li teaches encoding a number of different embedded computer instructions, commands, and information pertaining to the particular document (FF 11-13 and 15)—a document that can be ultimately stored in the computer's memory (FF 22) along with the instructions to operate on such a document (*see* FF 11). Providing a pointer to this information would have been an obvious expedient in view of the well-known advantages of using pointers to efficiently locate particular information from a large collection. Providing such a feature in Li is tantamount to the predictable use of prior art elements according to their

established functions—an obvious improvement. *See KSR*, 127 S. Ct. at 1740.

For the foregoing reasons, Appellant has not persuaded us of error in the Examiner's rejection of representative claim 17. Therefore, we will sustain the Examiner's rejection of that claim.

CONCLUSIONS

Appellant has not shown that the Examiner erred in rejecting claims 3, 5, 16, 18-20, and 23 under § 102. Nor has Appellant shown that the Examiner erred in rejecting claims 10-15 and 17 under § 103. Appellant, however, has shown that the Examiner erred in rejecting claims 8, 9, 22, 24, and 25 under § 103.

ORDER

The Examiner's decision rejecting claims 3, 5, 8-20, and 22-25 is affirmed-in-part.

Appeal 2009-0153
Application 09/670,113

No time period for taking any subsequent action in connection with this appeal may be extended under 37 C.F.R. § 1.136(a)(1)(iv).

AFFIRMED-IN-PART

ELD

DIGIMARC CORPORATION
9405 SW GEMINI DRIVE
BEAVERTON, OR 97008